

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. When striketrough cannot easily be perceived, [[double brackets]] are used to show the deletion. The status of each claim is indicated with one of (ORIGINAL), (CURRENTLY AMENDED), (CANCELLED), (WITHDRAWN), (NEW), (PREVIOUSLY PRESENTED), OR (NOT ENTERED). Please AMEND claims 1, 6, 10, and 13, CANCEL claims 2 – 4, and 9, and ADD new claims 14 – 15 in accordance with the following:

1. (CURRENTLY AMENDED) A capacitive amplifier for detecting and amplifying an electrical tone conducted by one of a group of wires in order to identify and trace a particular wire, the capacitive amplifier suppressing noise signals having a predetermined fundamental noise frequency and suppressing noise signals having frequencies that are harmonics of said predetermined fundamental noise frequency, said capacitive amplifier comprising:

~~a-~~a probe for being placed adjacent a wire under test;

~~b-~~an input terminal_i coupled to the conductive probe_i for receiving an input signal therefrom;

~~c-~~a suppression unit_i coupled to the input terminal_i for receiving the input signal and for suppressing said noise signals, said suppression unit comprising

an analog-to-digital (A/D) converter, coupled to the input terminal, for converting the input signal into a digital signal;

a memory, coupled to said A/D converter, for storing digital signal values;

a subtraction unit for receiving time-delayed digital signal values from said memory and for subtracting time-delayed digital signal values from digital signal values;
and

a digital-to-analog (D/A) converter coupled to said subtraction unit; and

~~d-~~an amplifier_i coupled to the suppression unit_i to amplify the noiseless output signal;

[[.]]

said suppression unit being arranged for receiving the input signal and for providing a time-delayed signal of the input signal and to subtract the time-delayed signal from the input signal, the time-delayed signal being delayed by a delay period substantially equal to the inverse of the noise frequency to be suppressed or an integer multiple thereof, and

said subtraction unit being part of a central processing unit (CPU) or its functions being performed by said CPU and said CPU being arranged for reading out digital signal values from said memory after a storage time, said storage time being identical with said delay time, and for subtracting these time-delayed digital signal values from actual input digital signal values.

2. (CANCELLED)

3. (CANCELLED)

4. (CANCELLED)

5. (ORIGINAL) A capacitive amplifier according to claim 1, further including a high pass filter coupled to said input terminal.

6. (CURRENTLY AMENDED) A capacitive amplifier according to claim 5, wherein said high pass filter is comprised of a differential amplifier, wherein ~~the~~a positive input port of said differential amplifier is coupled to said input terminal and ~~the~~a negative input port of said differential amplifier is coupled to ~~the~~an output of a low pass filter and ~~the~~an input of said low pass filter is coupled to said input port.

7. (ORIGINAL) A capacitive amplifier according to claim 6, wherein said low pass filter has a cut-off frequency of about 300 Hz.

8. (ORIGINAL) A capacitive amplifier according to claim 5, wherein said high pass filter is part of a preamplifier stage comprising a preamplifier and said high pass filter.

9. (CANCELLED)

10. (CURRENTLY AMENDED) A capacitive amplifier for detecting and amplifying an electrical tone conducted by one of a group of wires in order to identify and trace a particular wire, the capacitive amplifier suppressing noise signals having a predetermined fundamental noise frequency and suppressing noise signals having frequencies that are harmonics of said predetermined fundamental noise frequency, said capacitive amplifier comprising:

a probe placed adjacent a wire under test;

an input terminal, coupled to the conductive probe, to receive an input signal therefrom;

a suppression unit, coupled to the input terminal, to receive the input signal and to suppress said noise signals;

an amplifier, coupled to the suppression unit, to amplify the noiseless output signal; and

a volume tuning section coupled to said input terminal, said volume tuning section comprising a digital potentiometer and a push button section to switch on said capacitive amplifier and to actuate said digital potentiometer.

~~A capacitive amplifier according to claim 1,~~ wherein said push button section comprises a push button and three electrical contacts arranged in a line such that by pressing the push button the middle contact is actuated and said capacitive amplifier is thereby switched on and by shifting the pressed push button in the forward or the backward direction the front or the back contact is additionally actuated and the digital potentiometer is thereby controlled to increase or to reduce the signal level.

11. (ORIGINAL) A capacitive amplifier according to claim 1, wherein said probe includes a probe tip having an electrically non-conductive or high-resistive surface.

12. (ORIGINAL) A capacitive amplifier according to claim 11, wherein said probe tip is made of carbon fiber material or from anodized aluminum.

13. (CURRENTLY AMENDED) A tone generator for use in conjunction with a capacitive amplifier according to ~~anyone of the preceding claims~~claim 1, comprising a 4-position slide switch ~~for~~to selecting between the modes square wave, sine wave, continuity and talking mode, wherein in the square wave mode a tone signal is output as a square wave signal, in the sine wave mode a tone signal is output as a sine wave signal, in the continuity mode the continuity of any conductor, circuit or electronic part can be tested, and in the talking mode a specific DC voltage can be delivered.

14. (NEW) A capacitive amplifier according to claim 10, wherein said probe includes a probe tip having an electrically non-conductive or high resistive surface.

15. (NEW) A capacitive amplifier according to claim 14, wherein said probe tip is made of carbon fiber material or from anodized aluminum.